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10/019,330	03/07/2002	Mihaly Toth	44201757 PAR	6246

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EXAMINER

AVELLINO, JOSEPH E

ART UNIT	PAPER NUMBER
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2143

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,330

Applicant(s)

TOTH ET AL.

Examiner

Joseph E. Avellino

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. Claims 1-22 are presented for examination; claims 1, 18, 21, and 22 independent.

2. In view of the Appeal Brief filed on February 9, 2006, PROSECUTION IS HEREBY REOPENED. A new rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bayeh et al. (USPN 6,098,093) (hereinafter Bayeh) in view of Freund et al. (USPN 5,925,098) (hereinafter Freund).

4. Referring to claim 1, Bayeh discloses a method of managing a plurality of sessions (e.g. abstract), the sessions being between a plurality of terminals and a server (i.e. web server and client) and a server having a plurality of threads (i.e. servlets containing a plurality of servlet threads) the method comprising:

routing the sessions to a plurality of web servers (i.e. sending the client requests to a web server based on a load balancing algorithm provided by the host 59) (col. 8, lines 50-55);

assigning a servlet to each web server which provides session services (since each servlet contains at least one servlet thread, this satisfies the limitation of assigning a thread to the web server sessions) (col. 8, lines 42-67).

Bayeh does not specifically state grouping the sessions into a plurality of groups, rather routing the sessions to the web servers based on a load-balancing algorithm. In analogous art, Freund discloses another method of managing a plurality of sessions which discloses assigning sessions to a group (i.e. client requests are divided amongst queues based on the type of transaction) (e.g. abstract; Figure 2; col. 5, lines 1-26). It would have been obvious to one of ordinary skill in the art to combine the teaching of Bayeh with Freund since Bayeh discloses that load-balancing techniques are known in the art (col. 8, lines 56-57). This would lead one of ordinary skill in the art to search for

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methods of session distribution between servers, eventually finding Freund and its novel method of utilizing multiple queues for request transaction type for transaction processing, thus providing the same execution environment for each transactionally related request as supported by Freund (col. 5, lines 25-27).

5. Referring to claims 2 and 3, Bayeh discloses the grouping occurs when a session is created or becomes active (it is understood that when a session is created, it is inherently becoming active) (col. 8, lines 42-58).

6. Referring to claim 4, Bayeh discloses one group is provided for each thread, such that there are equal numbers of groups and threads (i.e. equal numbers of groups, which are web servers receiving requests, and threads, which are servlet engines which will participate in the session management solution) (col. 8, lines 59-67).

7. Referring to claim 5, Bayeh discloses the invention substantively as described in claim 1. Bayeh does not specifically disclose the sessions are assigned statically to particular threads, however does state that load-balancing techniques are well known in the art (col. 8, lines 55-58). This would lead one of ordinary skill in the art to search for load balancing techniques in which static assignment techniques (i.e. based on client's IP address or round-robin technique) are well known in the art. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for static load balancing techniques are well known and expected in the art. It would be obvious

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to a person of ordinary skill in the art at the time the invention was made to modify the invention of Bayeh to incorporate static load balancing techniques in order to easily route requests between entities, without undue processing and thereby increasing throughput and reducing overall system overhead.

8. Referring to claim 6, Bayeh discloses the invention substantively as described in claim 1. Bayeh does not specifically state a session is put into a first group in a first time period before suspension and put into a second group in a second time period following resumption, however when a session resumes, it will be processed by the front-end processor as it was a new session connection, and will be routed as required by the host 59, it will then be routed to a second group which may or may not be the same as the first group. By this rationale it would have been obvious to one of ordinary skill in the art to understand that a session is put into a first group in a first time period before suspension and put into a second group in a second time period following resumption to simplify connection processing and reduce overall system overhead.

9. Referring to claim 7, Bayeh discloses the invention substantively as described in claim 6 above. Bayeh does not specifically state the second group is chosen on the basis of activity levels, however does disclose the sessions are assigned based on the relative levels of particular threads, however does state that load-balancing techniques are well known in the art (col. 8, lines 55-58). This would lead one of ordinary skill in the art to search for load balancing techniques in which incorporate load balancing

assignment techniques (i.e. round-robin, percentage of activity monitored, etc.) are well known in the art. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for relative load balancing techniques are well known and expected in the art. It would be obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Bayeh to incorporate load balancing techniques in order to easily route requests between entities efficiently, and effectively utilize processing time in order to maximize throughput of the system.

10. Referring to claim 8, Bayeh discloses the invention substantively as described in claim 6 above. Bayeh does not specifically state the second group is chosen on the basis of activity levels, however does disclose the sessions are assigned randomly to particular threads, however does state that load-balancing techniques are well known in the art (col. 8, lines 55-58). This would lead one of ordinary skill in the art to search for load balancing techniques in which incorporate random load balancing assignment techniques which are well known in the art. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for random load balancing techniques are well known and expected in the art. It would be obvious to a person of ordinary skill in the art at the time the invention was made to modify the invention of Bayeh to incorporate random load balancing techniques in order to easily route requests between entities efficiently, reducing processing overhead by not requiring monitoring software for the processes, thereby increasing throughput and availability of the system.

11. Referring to claim 9, Bayeh discloses each group has a queue and each session puts its events into that queue (col. 12, line 29-58).

12. Referring to claim 10, Bayeh discloses the sessions are grouped by a thread referred to as an acceptor thread (i.e. load balancing process (col. 8, lines 42-58).

13. Referring to claim 11, Bayeh discloses the acceptor thread calls a function which is answered by a notification that a new session has been created and then assigns the new session to a particular session group (col. 8, lines 43-57).

14. Referring to claim 12, Bayeh discloses the invention substantively as described in claim 1. Bayeh does not specifically disclose the sessions remain open for an undetermined period of time until closed, however it is well known that clients can close sessions on their own using HTTP (i.e. HTTP CLOSE function). By this rationale, "Official Notice" that both the concepts and advantages of providing for sessions which remain open until closed is well known in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Bayeh to include sessions which remain open until closed in order to conform to the HTTP protocol and allow computers which conform to this protocol to effectively manage their own sessions.

15. Referring to claims 13 and 14, Bayeh discloses the invention substantively as described in claim 1. Bayeh does not specifically disclose the terminals are mobile terminals and cellular telephones, however it is well known that wireless mobile terminals and cellular telephones can act as client devices and request information from servers. By this rationale, "Official Notice" that both the concepts and advantages of providing for cellular telephones and mobile terminals as the terminals is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the system of Bayeh to include cellular phones as the terminals to allow the system to be accessed by a plurality of different entities, thereby providing a bigger market for the system and allowing more clients to access the system, and further increase customer satisfaction.

16. Referring to claim 15, Bayeh discloses load balancing means is included in the assignment mechanism of the session (col. 8, lines 42-58).

17. Referring to claim 16, Bayeh discloses the sessions involve obtaining information or conducting transactions through the Internet (col. 8, lines 20-41).

18. Referring to claim 17, Bayeh discloses the invention substantively as described in claim 1. Bayeh does not specifically disclose the sessions are part of the Wireless Session Protocol (WSP), however the WSP is well known to easily provide session service from mobile devices to web servers and allow mobile terminals to access the

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Internet. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for using the WSP protocol for sessions is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to provide using the WSP for the devices in order to allow mobile devices to access the service, thereby allowing more clients to access the system, and further increase customer satisfaction.

19. Claims 18-22 are rejected for similar reasons as stated above.

Claim Rejections - 35 USC § 102

20. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 9-11, 15-16, 18, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Freund.

21. Referring to claim 1, Freund discloses managing a plurality of sessions (i.e. transaction requests) by grouping the sessions into a plurality of groups (i.e. denoted by a plurality of queues 21a-22n) (Figure 2); and assigning a thread (i.e. execution thread 22a-22n) to each group of sessions so that the thread only handles the events of that group of sessions (i.e. each thread has its own queue) (e.g. abstract; Figure 2).

22. Referring to claims 2 and 3, Freund discloses the grouping occurs when a session is created or becomes active (it is understood that when a session is created, it is inherently becoming active which is when a transaction occurs) (col. 5, lines 5-10).

23. Referring to claim 4, Freund discloses each thread has its own group (i.e. one-to-one relationship) (col. 5, lines 1-20).

24. Referring to claim 5, Freund discloses sessions are assigned statically to particular threads (i.e. requests similar to previous requests are assigned to the same thread) (col. 5, lines 15-25).

25. Referring to claim 9, each group has a queue and each session puts its events (i.e. transaction requests) into that queue (Figure 2).

26. Referring to claim 10, Freund discloses the sessions are grouped by an acceptor thread (i.e. Object adapter) (Figure 2, ref. 23, 23a).

27. Referring to claim 11, Freund discloses the acceptor thread calls a function which is answered by notification that a new session has been created (i.e. new requests) and then assignees the new session to a particular session group (i.e. requests are queued by the OA, which then assigns the requests to the threads) (col. 5, lines 39-55).

28. Referring to claim 15, Freund discloses load balancing is included in the assignment mechanism of the session (col. 7, lines 10-20).

29. Referring to claim 16, Freund discloses the sessions involve obtaining information or conducting transactions through the internet (e.g. abstract).

30. Claims 18, 21 and 22 are rejected for similar reasons as stated above

Claim Rejections - 35 USC § 103

31. Claims 6-8, 12-14, 17, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freund.

32. Referring to claims 6-8 Freund does not specifically disclose a session is put into a first group and a second group before and after suspension respectively, wherein the second group is based on relative levels, or randomly, however when another transaction from the same client is received, a new code will be added to this particular

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request, which will then be routed to a particular thread (col. 5, lines 38-55). As shown earlier that if a request is for a different transaction (noted by different transaction identification numbers) it is provided to a different thread (col. 5, lines 10-28), and that the selector 45 gathers information regarding the relative loads of each queue (col. 6, lines 20-40). Load balancing techniques are well known in the art (as evidenced by Bayeh) and therefore one of ordinary skill in the art would realize the benefits of load-balancing the groups based on the relative levels of activity in order to keep all the threads from overloading or being underutilized, thereby making the system more efficient.

33. Referring to claim 12, Freund discloses the invention substantively as described in claim 1. Freund does not specifically disclose the sessions remain open for an undetermined period of time until closed, however it is well known that clients can close sessions on their own using HTTP (i.e. HTTP CLOSE function). By this rationale, "Official Notice" that both the concepts and advantages of providing for sessions which remain open until closed is well known in the art. It would have been obvious to one of ordinary skill in the art to modify the teaching of Freund to include sessions which remain open until closed in order to conform to the HTTP protocol and allow computers which conform to this protocol to effectively manage their own sessions.

34. Referring to claims 13 and 14, Bayeh discloses the invention substantively as described in claim 1. Bayeh does not specifically disclose the terminals are mobile

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terminals and cellular telephones, however it is well known that wireless mobile terminals and cellular telephones can act as client devices and request information from servers. By this rationale, "Official Notice" that both the concepts and advantages of providing for cellular telephones and mobile terminals as the terminals is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to modify the system of Bayeh to include cellular phones as the terminals to allow the system to be accessed by a plurality of different entities, thereby providing a bigger market for the system and allowing more clients to access the system, and further increase customer satisfaction.

35. Referring to claim 17, Bayeh discloses the invention substantively as described in claim 1. Bayeh does not specifically disclose the sessions are part of the Wireless Session Protocol (WSP), however the WSP is well known to easily provide session service from mobile devices to web servers and allow mobile terminals to access the Internet. By this rationale, "Official Notice" is taken that both the concept and advantages of providing for using the WSP protocol for sessions is well known and expected in the art. It would have been obvious to one of ordinary skill in the art to provide using the WSP for the devices in order to allow mobile devices to access the service, thereby allowing more clients to access the system, and further increase customer satisfaction.

36. Claims 19 and 20 are rejected for similar reasons as stated above.

Claim Rejections - 35 USC § 102

37. Claims 1-3, 6, and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hanif et al. (USPN 5,796,954) (hereinafter Hanif).

38. Referring to claim 1, Hanif discloses a method of managing a plurality of sessions (i.e. requests) the sessions being between a plurality of terminals (i.e. entities on a network) and a server (i.e. file server) having a plurality of threads, the method comprising:

grouping the sessions into a plurality of groups (i.e. the grouping is done based on the socket the requested is received) (e.g. abstract; Figure 6, ref. 170, 180); and
assigning a thread (i.e. either local or global threads 202, 204) to each group of sessions (i.e. sessions contained either in local queue 190 or global queue 200) so that the assigned thread only handles the events of that group of sessions (i.e. the local threads and global threads are different groups of threads, first set and second set, and therefore the global threads *only* handle events from the global queue and vice versa) (e.g. abstract).

39. Referring to claim 2, Hanif discloses the grouping occurs when a session is created (i.e. session opening requests, or SLS) (col. 4, lines 42-56).

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40. Referring to claim 3, Hanif discloses the grouping occurs when a session becomes active (i.e. once the session is established, the session is grouped with the global queue by using a server session socket, or SSS) (col. 4, lines 50-56).

41. Referring to claim 6, Hanif discloses a session is put into a first group in a first time period (i.e. into the local queue on the SLS socket) before suspension and put into a second group (i.e. established sessions on the SSS sockets) in a second time period following resumption (col. 4, lines 42-56).

42. Referring to claim 9, Hanif discloses each group has a queue (i.e. local or global queue) and each session puts its events into that queue (e.g. abstract).

Claim Rejections - 35 USC § 102

Claims 1-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ganmukhi et al. (USPN 5,850,399) (hereinafter Ganmukhi).

43. Referring to exemplary claim 1, Gahmukhi discloses managing a plurality of sessions by grouping the sessions into a plurality of groups (i.e. denoted by a plurality of queues 16) (Figure 1); and assigning a thread (i.e. first level scheduler) to each group of sessions so that the thread only handles the events of that group of sessions (i.e. each first level scheduler is in charge of each class queue) (e.g. abstract).

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44. Claims 2-21 are either expressly taught by Gahmukhi or are inherent variations thereof.

Response to Arguments

45. Applicant's arguments filed May 26, 2005 have been fully considered but they are moot in view of the new grounds of rejection.

Conclusion

46. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph E. Avellino whose telephone number is (571) 272-3905. The examiner can normally be reached on Monday-Friday 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



JEA

March 21, 2006



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